FACT SHEET AND STATEMENT OF BASIS
MOUNTAIN GREEN WASTEWATER TREATMENT FACILITY
UPDES PERMIT NUMBER: UT0024732
PERMIT RENEWAL
MINOR MUNICIPAL

FACILITY CONTACT

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DESCRIPTION OF FACILITY

The Mountain Green Wastewater Treatment Facility (MGWTF) is a discharging lagoon system which was constructed in 1989 and upgraded m 2007/2008. It is situated between State Road 167 and I-84 about one-fourth mile west of town center. The total surface area of the system is 138,600 square feet (3.18 acres) and consists of three cells. The upgrade installed a patented activated sludge aeration system that substantially reduces the detention time needed for digestion. The upgrade increased the treatment capacity from a population of about 2500 persons to about 6750 persons. Current population being served is about 2500 persons. The head-works contains a grinding device in the primary flow and a bar screen as backup. Incoming wastewater volume is metered through an eight-inch Parshall flume and outgoing treated water is metered through a v-notch weir. Water heights are measured by computerized ultrasonic devices. Disinfection is achieved by chlorine injection prior to flow through a 40,000 gallon serpentine contact chamber. The outfall STORET Number is 492101.

The upgraded system is designed to keep the biomass activated and aerated to promote accelerated digestion of organic matter. The ATLAS-IS installation at Mountain Green involved installing a partition to divide the Primary cell into two, hydraulically-separated zones. The first zone is the complete mix, activated sludge zone that retains, recirculates and digests the biomass by using large quantities of fine-bubble air to keep the biomass suspended and aerated as rapid digestion takes place.

There are 72 diffusers in the complete-mix zone, 18 diffusers in the second zone of the primary cell, and 15 diffusers in the secondary cell. The third cell is a clarifier with no diffusers.

A set of 18 (8'x8'x8') floating internal separator modules provide quiescent volumes in which treated wastewater is clarified and allowed to pass through piping into the partial mix, second zone of the divided cell, which is also aerated by fine-bubble diffusers, although at a reduced rate. Then the water passes over a weir and into the secondary cell where additional aeration is provided. Finally, the water passes through a pipe into the third cell where it is further clarified before being disinfected by chlorine while passing through an enlarged serpentine contact chamber.

DESCRIPTION OF DISCHARGE

It has been noted that during the spring months the MGWTF has violated the total suspended solids (TSS) limitation, 25 mg/L daily max. and 35 mg/L 7 day avg., in the past. These violations were due to algae growth on the final cell. The facility applied for and received the alternate discharge limits for TSS and BOD 65 mg/L daily maximum and 45 mg/L 7 day average. The MGWTF is meeting the alternate discharge limts.

There will be no ammonia limit for the facility because the volume of the discharge is so low that the wasteload allocation for the facility indicates an ammonia limit in excess of of 200 mg/L. This is much higher that expected ammonia limits in raw domestic wastewater. As a result ammonia was not included in this permit.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into the Weber River. The Weber River is Class 2B, 3A, and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

Class 2B -protected for secondary contact recreation (boating, wading and similar uses).

Class 3A -protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -protected for agricultural uses including irrigation of crops and stockwatering.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

As per the revised wasteload analysis, the effluent limitation for total residual chlorine (TRC) has changed to 2.5 mg/L

Based on effluent monitoring data and the existing treatment facility, the permittee is expected to be able to comply with the limitations.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD_5), *E. coli*, pH and percent removal for TSS and BOD_5 are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. Ammonia, total residual chlorine (TRC), and dissolved oxygen (DO) limits are water quality based, and derived by wasteload analysis. Wasteload Analysis indicates that these limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

The permittee will be limited to the effluent limitations as listed below.

Parameter	Effluent Limitations a/			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Total Flow	0.61	NA	NA	Report
BOD_5, mg/L	45	65	NA	NA
BOD_5 Min. % Removal	65	NA	NA	NA
TSS, mg/L	45	65	NA	NA
TSS Min. % Removal	65	NA	NA	NA
E-Coli, No./100mL	126	157	NA	NA
TRC, mg/L	NA	NA	NA	2.5
DO, mg/L	NA	NA	5.0	NA
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

a/ See Definitions, *Part VI*, for definition of terms.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following effluent self-monitoring requirements are based on the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991, and are the same as those in the previous permit. Reports shall be made on Discharge Monitoring Report (DMR) forms, and are due 28 days after the end of the monitoring month. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD_5, Influent d/	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
TSS, Influent d/	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
E. coli	Monthly	Grab	No./100mL
TRC	Daily	Grab	mg/L
DO	Monthly	Grab	mg/L
pH	Monthly	Grab	SU

a/ See Definitions, *Part VI*, for definition of terms.

b/ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

c/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

d/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

STORM WATER REQUIREMENTS

Because the design flow for the facility is under 1.0 MGD, no storm water permit is required.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

Although the permittee does not have to develop a State-approved pretreatment program, any wastewater discharges to the sanitary sewer are subject to Federal, State and local regulations. Pursuant to *Section 307* of the *Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge, the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is recommended that the permittee submit for review any local limits that are developed to the Division of Water Quality for review.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2*, *Permit Provisions, UAC R317-8-5.3* and *Water Quality Standards, UAC R317-2-5 and R317-2-7.2*.

The permittee is a minor municipal facility that discharges treated effluent, in which toxicity has neither been an existing concern, nor likely to be present in the discharge. The potential for toxicity is not deemed sufficient to require biomonitoring or to include whole effluent toxicity (WET) limits because there are no categorical industrial dischargers on the system. The permittee anticipates the waste stream to continue to be primarily from household or domestic origin only. Based on these considerations and the permitting authority's best professional judgment, there is no reasonable

potential for toxicity in the permittee's discharge *(per State of Utah Permitting and Enforcement Guidance Document for WET Control)*. As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit at any time in the future should additional information indicate the presence of toxicity in the discharge.

BIOSOLIDS MANAGEMENT REQUIREMENTS

Because the permitted facility is a lagoon, there is no regular sludge production. Therefore, the requirements of 503 do not apply unless or until sludge is removed from the bottom of the lagoon and used or disposed in some way. When planning sludge removal, the permittee should contact DWQ or EPA for guidance.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by Lonnie Shull
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Drafted February 10, 2010